A study of the jump training of young basketball players at the advanced specialization stage

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Abstract
This article presents the results of a survey of young basketball players aimed at studying their age characteristics, the comfort level of the workload, the frequency of jump training sessions, preferences in exercise selection, and the perceived effectiveness of their current jump training. The survey involved 27 athletes aged 7–14. The majority of respondents (85.2%) were in the 9–10 age group. The study revealed that most of the athletes (74.1%) found the workload during jump training to be comfortable. The most common training frequency was twice a week (40%). Among the exercises, the standing long jump was the most popular (30%). Regarding the effectiveness of the training process, the majority of respondents rated it as high (40%). The data obtained helped to identify key areas for optimizing the jump training of basketball players at the advanced specialization stage.

Keywords: basketball, young athletes, jump training, survey, physical fitness, training methodology.

Introduction

Developing jumping ability is one of the most critical components of physical conditioning for basketball players, particularly during the advanced specialization stage when athletic skills are actively being formed. Jump training helps develop explosive power, coordination, and speed, which directly impacts performance during gameplay. However, to achieve high-level results, it is essential to consider the athletes' age-specific characteristics, determine optimal training loads, and select appropriate exercises. As part of this study, the current state of jump training among young basketball players was assessed using a survey method. The primary objective was to identify the perceived comfort level of the training load, workout frequency, exercise preferences, and to evaluate the effectiveness of the current training regimen.

Methods

This study employed a complex of scientific and methodological approaches to investigate the organization and effectiveness of jump training in young athletes. The research methodology was grounded in contemporary theories of sports training and athlete preparation.

First, a literature review method was applied to analyze existing scientific sources related to the theory and methodology of sports training, load management, and the development of explosive strength in athletes (Balsevich, 2000; Platonov, 2004; Matveev, 1999). This allowed for the establishment of a theoretical foundation for the study.

Second, a survey (questionnaire) method was used as the primary data collection tool. The questionnaire was designed to assess athletes' perceptions of training load, frequency of jump training sessions, exercise preferences, and perceived effectiveness of the current training process. A total of 27 young athletes aged 7 –14 participated in the survey . This method enabled the collection of subjective evaluations directly from participants.

Third, a pedagogical observation method was employed to monitor athletes during training sessions. This included observing exercise execution, adaptation to training loads, and overall physical responses during jump training.

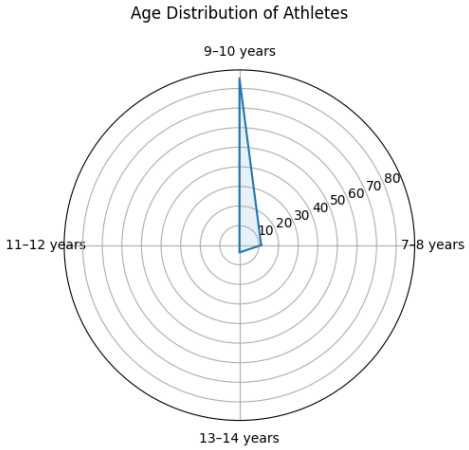
Fourth, statistical analysis methods were applied to process the collected data. The results were calculated and presented in percentage (%) form, allowing for the identification of key trends and patterns in training practices and athlete responses.

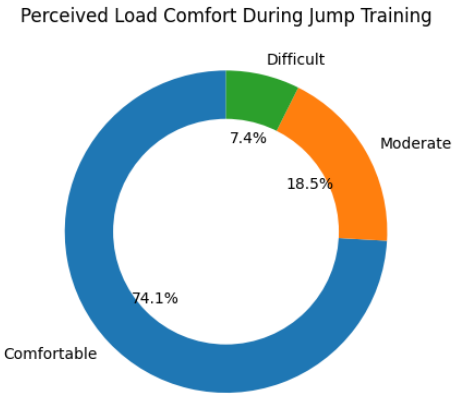
In addition, comparative and generalization methods were used to interpret the findings by comparing them with existing scientific data and drawing evidence-based conclusions.

Results and discussion

The survey results of young basketball players in the advanced specialization stage led to the following main conclusions: Analysis of Question 1: Athlete Age 7–8 years old: 11.1% (11.1% of 27 students = 3 students). This means that 3 out of 27 students are 7–8 years old. 9–10

Figure 1. **Age distribution of young athletes across different age groups (7–14 years).**
Figure 2. **Athletes' perceived level of training load comfort during jump training sessions..**





years old: 85.2% (85.2% of 27 students = 23 students). Thus, 23 out of 27 students are in the 9–10 age group. 11–12 years old: 0% (0% of 27 students = 0 students). There are no students in the 11–12 age group. 13–14 years old: 3.7% (3.7% of 27 students = 1 student). One student out of 27 falls into the 13–14 age group.

Analysis of Question 2: Perceived Exertion Level During Jump Training. Comfortable: 74.1% (20 out of 27 students). This means that 20 out of 27 students find the workload comfortable. Moderate: 18.5% (5 out of 27 students). Thus, 5 out of 27 students rate the workload as moderate. Difficult: 7.4% (2 out of 27 students). 2 out of 27 students consider the workload to be difficult. Analysis of Question 3: Frequency of Jump Training Sessions: Once a week — 25% of respondents: A quarter of the participants perform jumping exercises once a week, which may indicate they are maintaining a baseline level of jumping ability. Twice a week — 40% of respondents: The largest group of respondents trains twice a week, which is considered the optimal frequency for developing leg muscle strength and endurance. Three times a week — 20% of respondents: A fifth of the athletes increase their volume of jump work to three sessions per week, aiming for greater progress. More than 3 times a week — 10% of respondents: A minority gives special attention to jumping exercises, possibly as part of specialized training. Less than once a week or not at all — 5% of respondents: A small portion of

Figure 3. **Distribution of jump training frequency among participants**

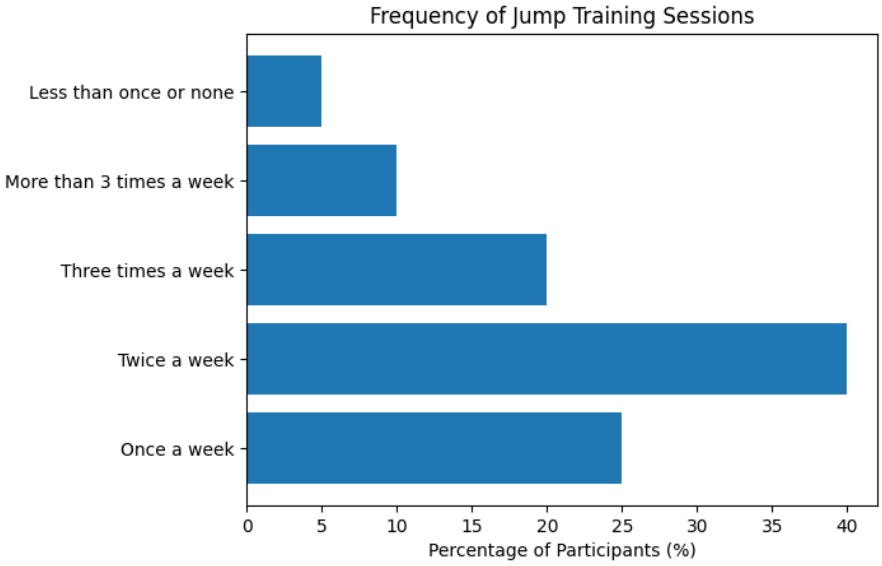
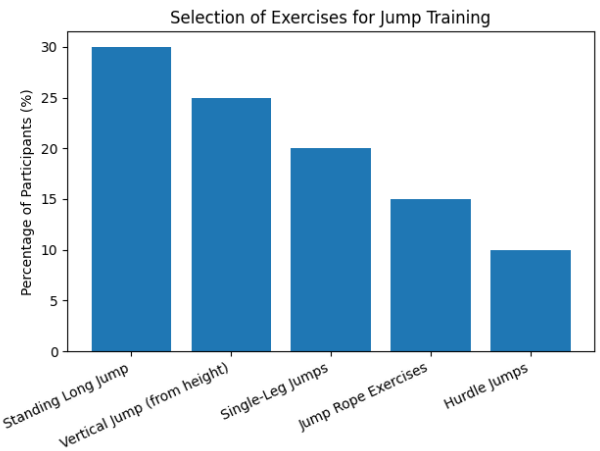


Figure 4. Exercise Preferences in Jump Training Programs
Figure 5. Assessment of the Effectiveness of Current Jump Training Programs





participants do not use jump training, which may limit their physical development.

Analysis of Question 4: Choice of Exercises for Jump Training (in percentages): Standing long jump — 30% of respondents: the most popular exercise for developing explosive leg strength and coordination. Vertical jumps for maximum height — 25% of respondents: actively used to increase vertical jump height. Single-leg hops — 20% of respondents: aimed at developing strength, balance, and coordination. Jumping rope — 15% of respondents: a popular means of developing general endurance and speed of movement. Hurdle jumps (over obstacles) — 10% of respondents: used to train strength, speed, and coordination when overcoming obstacles.

Analysis of Question 5: Effectiveness of current jump training (in percentages): Very high effectiveness — 20% of respondents: athletes noted a significant improvement in their jumping ability and leg strength. High effectiveness — 40% of respondents: most participants believe that the jump training yields good results and helps develop necessary physical attributes. Medium effectiveness — 25% of respondents: a portion of respondents rated the effectiveness as moderate, possibly due to a lack of consistency or individual training specifics. Low effectiveness — 10% of respondents: some participants are experiencing difficulty improving their jumping ability, which may be due to unsuitable exercises or improper execution technique. Very low effectiveness — 5% of respondents: a small percentage of athletes consider the jump training to be practically ineffective, which requires a review of the approaches to the training process.

Conclusion

The survey analysis revealed the following: The main age group of the respondents is 9–10 years old (85.2%), which corresponds to the stage of advanced specialization in basketball. Most athletes (74.1%) perceive the load during jump training as comfortable, indicating that the exercise intensity is well-chosen. The most common frequency for jump training sessions is twice a week (40%), which aligns with the optimal training model for this age group. The most popular exercises are the standing long jump (30%) and the maximum vertical jump (25%). The majority of respondents (40%) rate the effectiveness of their current jump training as high, which points to the effectiveness of the applied methodology. The data obtained suggest that the organization of jump training for the studied group of athletes is sufficiently effective. However, to further improve results, it is recommended to individualize the training loads and expand the range of jumping exercises, taking into account the students' age and physical fitness.

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Research interests
physical education and sport, Theory of physical education, Analyzing of sport competitions